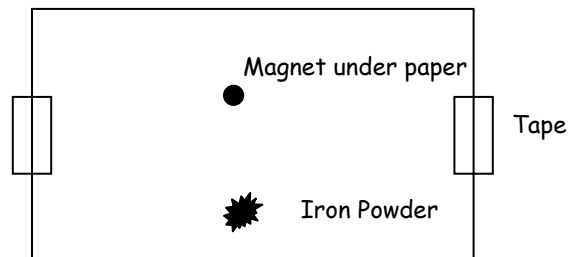




Directions:

1. Place a circular magnet underneath a piece of white paper about 2 cm from the edge of the paper (see picture below).
2. Tape the edges of the paper to the table top (see picture below).
3. Place a sample of iron powder (about the size of a dime) in a small pile on top of the paper about 5 cm from the edge of the paper, opposite to the edge where the magnet is located (see the picture below).



4. One person should place a straw in his/her mouth and bend down or sit so that the straw is at the same level as the iron powder. Using the straw, this person should gently blow the iron powder toward the magnet. Everyone else in the group should stand away, not facing the blowing powder. Sketch your observation after the first puff and describe what happened.

Drawing 1:

Description:

5. Repeat this process until all the powder is distributed from the pile. Make a separate sketch of you observations after each puff below.

Drawing 2:

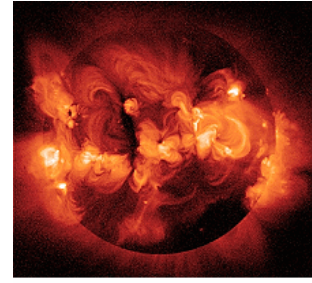
Description:

6. On your third drawing, label the magnet, "Earth." Label the iron powder, "solar wind."

Drawing 3:

Description:

7. How did the magnet affect the iron powder?



NASA

The Sun and solar wind are made up of **plasma** (hot gases containing highly charged particles).

8. How does this model the way the Earth affects the solar wind?

9. NASA's *Genesis* mission launched a spacecraft to collect samples of solar wind. Scientists believe that if they can capture and study solar wind particles, then they may be able to determine how our solar system formed. Why did the *Genesis* spacecraft have to travel about one million miles away from the Earth?



The *Genesis* spacecraft traveled sunward one million miles away from Earth to collect pure samples of solar wind.

Did you know...

Plasma is often considered to be the fourth state of matter. Can you name the other three states of matter? While plasma shows some characteristics of a gas, this collection of charged particles can conduct electricity and be affected by a magnetic field, both of which make plasma different from gas.